

control means for introducing the electromagnetic field from a planar plate disposed in parallel with the sample into the vacuum chamber, for setting distance between the plate and the sample to a value in a range from 30 mm to one half of the smaller one of diameters respectively of the sample or the plate, and for controlling a quantity of reaction between a surface of the planar plate and radicals in the plasma;

means for making radicals incident to a surface of the sample uniform in quantity and type thereof including a ring-shaped member disposed in a periphery of the sample; and

means for reducing variation in time of radicals incident to the sample including means for control of temperature of the ring-shaped member.

17. (thrice amended) A plasma etching system in accordance with claim 1, wherein the means for control of temperature of the ring-shaped member is a temperature controller disposed below a surface of the ring-shaped member.

23. (thrice amended) A plasma etching system in accordance with claim 1, wherein:

the means for controlling temperature of the ring-shaped member is disposed below a surface of the ring-shaped member and controls the temperature by circulating a liquid of which temperature is controlled; and

the temperature controlled ranges from 20°C to 140°C.

58. (amended) A plasma etching system for use with a surface etching apparatus in which in a vacuum chamber including vacuum generating means, source material gas supply means, sample setting means, and high-frequency power applying means, the source material gas is transformed into plasma to achieve surface etching of the sample, means for generating the plasma including

electromagnetic wave supply means and magnetic field generating means,  
comprising:

a controller for introducing the electromagnetic field from a planar plate  
disposed in parallel with the sample into the vacuum chamber, for setting a distance  
between the plate and the sample to a value in a range from 30 mm to one half of a  
smaller one of respective diameters of the sample and the plate, and for controlling a  
quantity of reaction between a surface of the planar plate and radicals in the plasma;

wherein the distance between the sample and the plate is maintained during  
plasma etching; and

wherein a ring-shaped member is disposed in a periphery of the sample, and  
a temperature controller controls a temperature of the ring-shaped member.

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64. (amended) A plasma etching system in accordance with claim 58,  
wherein the temperature controller is disposed below the surface of the ring-shaped  
member disposed in a periphery of the sample and effects cooling of the ring-shaped  
member.

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66. (amended) A plasma etching system in accordance with claim 64,  
wherein the ring-shaped member is applied with high-frequency power.

#### REMARKS

By the above amendment, the specification has been amended at page 14,  
line 22, to indicate that the width is greater than 0mm to 40mm, such that the  
objection to the disclosure should now be overcome. Additionally, claim 66 has been  
amended in a manner which should overcome the rejection under 35 U.S.C. §112,  
second paragraph, in that claim 66 has been amended to depend from claim 64.  
Furthermore, by the present amendment, independent claim 1 has been amended to  
incorporate features of dependent claim 17 therein regarding the control of